toxicity profiles depending on the size and location of metastatic sites. Clinical data indicate that the number of patients with oligometastatic disease receiving aggressive treatments is increasing rapidly. The distinct biological behavior of tumors with oligometastatic spread is currently explored by a number of groups.
The most robust verification of ablative oligometastasis-directed therapy has been documented in patients with limited intracranial metastases for which systemic treatment had limited efficacy. Randomized studies have demonstrated that surgical resection or radiosurgery can improve overall survival when added to whole-brain irradiation. Randomized evidence also exists for surgical resection of metastases, not solely in patients with oligometastases, causing epidural spinal cord compression. Outside of the central nervous system, limited randomized evidence exists to guide therapeutic decisions for patients with oligometastases. Most practice patterns are guided by large, single-institution or pooled series of patients demonstrating favorable survival. Limited number of studies with adequate controls raise the possibility that this survival gain might not be due to treatment effect, but rather due to patient selection criteria. For the widespread acceptance of oligometastatic ablative treatment, stronger evidence supporting its efficacy is needed.

Oligo- and hypofractionated stereotactic radiotherapy of lung cancer
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As a result of two decades of research, hypofractionated stereotactic radiotherapy of stage I non-small cell lung cancer (NSCLC) is now established as a standard of care in patients who are not candidates for surgical treatment. As demonstrated in large series of patients treated with SBRT for NSCLC, locoregional control exceeds 80% at 5-years, which appears comparable to surgical outcomes. SBRT programs became available in most European countries and centers, including several institutions in Poland. Implementation of successful SBRT program must focus on 4D-CT imaging, co-registered with repeatable breath cycle, careful GTV and PTV delineation taking into account respiratory motion, treatment planning using advanced B-type algorithms by experienced physicists, image guided treatment delivery, and implementation of strict quality control measures. Most common treatment schedules include 54Gy in 3 fractions, 55Gy in 5 fractions and 60Gy in 8 fractions, depending on tumor location and proximity of organs-at-risk. Current research efforts exploring SBRT for lung cancer include clinical trials in patients who are considered for surgery, management of centrally located tumors, clinical and radiological patterns of disease recurrence, clinical and molecular prognostic factors and assessment of systemic therapies, including immunotherapies and targeted agents. Other studies evaluate the addition of SBRT as a boost to conventionally fractionated radiochemotherapy for stage II – III NSCLC.

SBRT of liver tumors
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Only relatively small proportion of hepatic tumors can be safely resected. Modern radiation treatment techniques can enhance, thus, therapeutic options beyond palliative systemic treatment or other local ablative techniques. The data from the literature indicate that stereotactic body radiation therapy (SBRT) can offer satisfactory rate of local control both in primary hepatocellular cancer (HCC) or liver metastases (LM). Total radiation dose of 45 Gy or more and target diameter of less than 5 cm are among the factors related to favorable local control. Review of the published data indicate that local control at 1-2 years can, in general, exceed 70% in properly selected groups of patients. Respiratory motion of the liver provides a challenge in delivery of high radiation dose to the tumor demanding expansion of irradiated volume to encompass movements of the tumor. To address this problem special radiation techniques are used including respiratory gating, tracking or abdominal compression. Such techniques allow to minimize the margins and reduce, thus, the dose delivered to the normal tissue that surrounds the tumor. In spite of high local control rates overall survival of patients with hepatic tumors treated with SBRT is not satisfactory, mostly because of distant failures. This illustrates urgent need to develop new treatment strategies that would better integrate available local and systemic therapies.

CyberKnife for prostate cancer patients - preliminary results of 200 patients irradiation.
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Introduction: Prostate cancer (PC) is one of most common malignancies. Large percentage of PC patients is treated with radiotherapy (RT). The main problem connected to conventional radiotherapy is long overall treatment time (OTT) ranging to 8 weeks, so many attempts of OTT shrinkage are done. The one of them is CyberKnife based radioablation allowing to complete the therapy within 5-9 days.
Material: 200 PC patients aged from 53 to 83 (mean 69) irradiated every other day using fd of 7.25 Gy to TD of 36.25 Gy (OTT 9 days). 95 were from low risk, 104 from intermediate risk (excluding Gleason 4+3) and 1 from high risk group. The maximal PSA varied from 1.05 to 50.3 (mean 8.6, median 7.6). T stage varied from T_{1c} to T_{2c}. Means of prostate dimensions before the treatment were 42.5x37.5x40.4 mm for X, Y and Z axes respectively.
Method: After treatment completion, 1, 4, 8 months later and next every each 6 months up to 26 months the percentage of patients using hormonal drugs (HT), GI (gastro-intestinal) and GU (genito-urinary) toxicity using EORTC/RTOG scale (acute up to 4th month and next late) and PSA were checked.
Results: Results obtained during FU are presented in the Table.